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(54) Mail notification system and method

(57) An electronic mailing system having at least a main host computer, for transferring mail between a sending subscriber and a recipient subscriber is provided. The subscribers are not connected to each other or to the host computer. Messages are sent from one sender subscriber to another recipient subscriber via the host computer which stores mail addressed to subscribers in individual mailboxes. The host computer has a dialing unit connected to it for calling a phone associated with the recipient subscriber whenever a new message arrives at the host computer. The recipient has a receiving unit including a call intercepting unit associated with the recipient's phone for intercepting and identifying calls from the dialing unit and a display unit for displaying an indication that the dialing unit has called the call intercepting unit.

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Description

FIELD OF THE INVENTION

The present invention relates to electronic mailing in general and more particularly to a method and system for notifying a destination terminal that mail is awaiting collection.

BACKGROUND OF THE INVENTION

Postal services throughout the world deliver mail either directly to each individual recipient's home address or to a central location for collection by the recipient. The central location is generally located adjacent to the area post office and commonly consist of numerous post office boxes, with one box being assigned to each recipient. The latter method of mail delivery is preferred by the postal service as it enables the postal service to deliver the mail more quickly and therefore at a cheaper cost, especially in areas where the population is widely spread.

The disadvantage of the post office box (POB) is the need for the recipient to go and retrieve the mail himself from the POB. The POBs are generally of a standard size and incapable of storing large amounts of mail. If the mail is not retrieved regularly, the box becomes full and any extra mail cannot be placed in the box and has to be held by the post office until the earlier mail has been removed. For the private user who only receives mail on an irregular basis, the trip to the POB may turn out to be a wasted journey if the POB is empty.

In addition to standard postal services, messages and mail can also be sent via electronic mailing systems.

Electronic mailing systems are used by computers to send mail and messages either through the telephone network or area network such as a LAN (local area network) or WAN (wide area network).

An example of the prior art electronic mailing system is shown in Fig. 1 which is a flow chart and block diagram illustrating the prior art system and operation of sending and receiving mail respectively between non-connected locations.

For the purposes of this description, the initiator of a message is referred to as the sender and the addressee, that is, the person to whom the mail is addressed and who wishes to receive the mail is referred to as the recipient.

Generally, in order to send a message, a sender **10** uses a modem connected to a computer, generally designated **12**, to dial a host computer, generally designated **14**. Host computer **14** acts as a central transfer station for the movement of messages from the sender **10** to a recipient **16**. Messages are not forwarded directly to recipient **16** but remain stored in host computer **14** until it is collected by recipient **16**. Recipient **16** also needs to be connected to a modem and computer system, generally designated **18** in order to check whether any messages are waiting for him and to receive the messages.

The process of communication between sender **10** and recipient **16** via host computer **14** can be described as follows. Sender **10** dials host computer **14** (step 20), which after successfully identifying the sender (step 22), informs the sender whether there is mail for him (step 24). Generally, host computer **14** informs every caller (sender or recipient) at the time of initial connection to the computer, whether any mail addressed to him. Sender **10** can then transmit his message (step 26). Host computer **14** identifies the recipient (step 28) and stores the message (step 30) in the recipient's mailbox **31**. Host computer **14** simultaneously updates the received mail status of the recipient (step 32).

To collect any mail or even to just check whether any mail has been received, recipient **16** needs to contact host computer **14** (step 34). As previously described with respect to sender **10**, computer **14** first identifies the caller (step 22) and then checks the mail received status (step 24) and informs recipient **16** accordingly. Recipient **16** can then read any messages stored in his mailbox and if so desired can download them (step 36). After mail has been collected, host computer **14** resets the mail status of the recipients (step 32) to "no messages" status.

Voice messages may also be send via the telephone network using a Voice Mail (VM) system. Voice mail systems include means to identify and store voice messages. An individual user can connect his computer, via a card which can identify speech, to the telephone network and thereby receive messages. A subscriber can rent a voice mail box (VMB) from the telephone company. A VMB is similar to a POB but stores voice or speech messages instead of written mail. Callers to the subscriber's number can leave messages which are stored in the subscriber's VMB for later retrieval by him. The VMB subscriber needs to call his box in order to discover whether any messages have been received and to retrieve them.

Conventional post office boxes, electronic mailing systems and voice mail systems have the disadvantage that the recipient of a message is totally unaware that there is a message waiting for him. The recipient is required to periodically contact the POB, VMB or host computer just to check whether any mail awaits him.

SUMMARY OF THE INVENTION

It would be desirable to be able to provide an electronic mailing system and method which automatically notifies an intended recipient that there is mail awaiting his collection. It would also be desirable for the recipient to be able to receive notification of the urgency status of mail stored for him.

It would also be desirable to be able to provide a system for automatically notifying a person that mail has been deposited in his post office box and is awaiting col-

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lection. It would also be further desirable to provide a system for automatically notifying a person that there are voice mail or telephone messages requiring his attention.

According to the invention there is provided an electronic mailing system having at least a main host computer, for transferring mail between a sending subscriber and a recipient subscriber The subscribers are not connected to each other or to the host computer. Messages are sent from one sender subscriber to another recipient subscriber via the host computer which stores mail addressed to subscribers in individual mailboxes. The host computer has a dialing unit connected to it for calling a phone associated with the recipient subscriber whenever a new message arrives at the host computer. The recipient has a receiving unit including a call intercepting unit associated with the recipient's phone for intercepting and identifying calls from the dialing unit and a display unit for displaying an indication that the dialing unit has called the call intercepting unit.

According to a second embodiment of the invention there is provided an electronic mailing system having at least a main host computer, for transferring mail between a sending subscriber and a recipient subscriber. The host computer has a dialing unit connected to the host computer for calling a telephone number associated with the recipient subscriber whenever a mail message for the recipient subscriber arrives at the host computer. The recipient has a receiving unit which includes a modem communicator associated with the recipient subscriber's telephone for receiving the telephone call from the dialing unit: and a personal computer having a display unit for displaying an indication that the dialing unit has called the call intercept unit. The modem communicator includes a call intercept unit, for intercepting the telephone call from the dialing unit. The receiving unit also has a phone database for storing details associated with each of the calling telephone numbers.

Additionally, in accordance with a preferred embodiment of the present invention, the host computer includes a communications processor for processing information communicated to the host computer: a user database for storing details of subscribers to the host computer: and a mail control unit for processing mail messages communicated to the host computer. The mail control unit includes a plurality of mailboxes for storing of the received mail messages, each of the plurality of mailboxes allocated to one of the subscribers and a mail update unit for registering and updating the status of one of the mailboxes whenever a mail message is received or collected from the mailbox.

There is also provided in accordance with a preferred embodiment of the invention, a mail notification system for notifying an addressee subscriber that mail has been deposited in the addressee subscriber's mailbox which includes a processing unit, a dialing unit, a receiving unit and a display unit. The dialing unit is connected to the processing unit for calling a telephone number associated with the addressee subscriber whenever mail is deposited in his mailbox. The receiving unit includes a call intercept unit associated with the addressee subscriber's telephone. for intercepting the telephone call from the dialing unit. The display unit indicates when the dialing unit has called.

Furthermore, in accordance with a preferred embodiment of the invention. the mail notification system also includes a mail sorter, connected to the processing unit, for identifying and classifying mail addressed to the addressee subscriber.

Additionally, there is thus provided in accordance with a preferred embodiment of the invention, a mail notification system for notifying an addressee subscriber that mail has been deposited in said addressee subscriber's mailbox, which includes a processing unit connected to a sensing device, connected to the addressee subscriber's mailbox for sensing whenever mail is deposited in or removed from said addressee subscriber's mailbox.

Additionally, there is thus provided in accordance with a preferred embodiment of the invention, a mail notification system for notifying an addressee subscriber that mail has been deposited in said addressee subscriber's mail box, which includes a processing unit for processing the incoming mail, a dialing unit, a receiving unit including a modem communicator associated with the addressee subscriber's telephone for receiving the telephone call from the dialing unit and a computer system which includes a display unit.

Furthermore, in accordance with a preferred embodiment of the invention, the dialing unit is also connected to the processing unit for calling a telephone number associated with the addressee subscriber whenever mail is deposited in his mailbox and a receiving unit and a display unit. The receiving unit includes a call intercept unit associated with the addressee subscriber's telephone, for intercepting the dialed telephone call.

Furthermore, in accordance with a preferred embodiment of the invention, the mail notification system also includes a user database for storing details of mailbox subscribers and a mail control unit for registering and updating the status of the mailbox whenever mail is received or collected from the mailbox. The mail may be any type of mail such as postal or voice mail.

Additionally, in accordance with a preferred embodiment of the present invention, receiving unit further includes a phone database for storing details associated with each of the calling telephone numbers.

Furthermore, in accordance with a preferred embodiment of the present invention, the display unit may display an incrementing counter for displaying the number of calls received, an alphanumeric or light emitting diode display or the telephone number of the caller.

Furthermore, in accordance with a preferred embodiment of the present invention, the call intercept unit may be a paging receiver not directly connected to the

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recipient subscriber's telephone or a remote receiver.

Additionally, in accordance with a preferred embodiment of the present invention, the call intercept unit includes apparatus for processing data sent by the telephone network.

There is also provided in accordance with a preferred embodiment of the invention, a method for notifying a subscriber that mail has been deposited in said subscriber's mailbox. The method includes the steps of:

a. processing incoming mail;
b. depositing mail addressed to the subscriber in the subscriber's mailbox;
c. dialling a telephone number associated with the subscriber whenever mail is deposited in the subscriber's mailbox;
d. intercepting the dialled call by means of an unit associated with the subscriber's telephone; and
e. displaying an indication that the dialled call has been intercepted.

Furthermore, in accordance with a preferred embodiment of the invention, the step of processing includes the step of sorting said incoming mail by identifying and classifying said mail and the step of sensing whenever there is a change in the amount mail deposited in the subscriber's mailbox.

Additionally, in accordance with a preferred embodiment of the invention, the method further includes the step of registering and updating the status of the subscriber's mailbox whenever a change is made in the amount of mail deposited in the subscriber's mailbox.

Furthermore, in accordance with a preferred embodiment of the invention, the step of intercepting includes the step of identifying said dialled call from a database storing details of telephone numbers.

Furthermore, in accordance with a preferred embodiment of the invention, the step of intercepting includes the step of processing data sent by the telephone network.

There is also provided in accordance with a preferred embodiment of the invention, a method for transferring mail between a sending subscriber and a recipient subscriber via a host computer. The sending and recipient subscribers are not continually connected to each other or to the host computer. The method includes the steps of:

a. dialling a telephone number associated with the recipient subscriber whenever a mail message for the recipient subscriber arrives at the host computer;
b. intercepting the dialled telephone call by means of an unit associated with the subscriber's telephone; and
c. displaying an indication that the dialled call has been intercepted.

Furthermore, in accordance with a preferred embodiment of the invention, the step of intercepting includes the step of identifying the dialled call from a database storing details of telephone numbers.

Furthermore, in accordance with a preferred embodiment of the invention, the step of intercepting includes the step of processing data sent by the telephone network.

Additionally, in accordance with a preferred embodiment of the invention, the method for transferring mail further includes the steps of storing received messages within one of a plurality of mailboxes and registering and updating the status of mail messages received or collected from the mailboxes.

Furthermore, in accordance with a preferred embodiment of the invention, the step of displaying includes the step of displaying the number of calls received or the telephone number of the caller.

BRIEF DESCRIPTION OF THE DRAWINGS

These and further construction features of the invention will be better appreciated in the light of the ensuing description of a preferred embodiment thereof, given by way of example only with reference to the accompanying drawings wherein:

Fig. 1 is a flow chart and block diagram illustration of a prior art electronic mailing system;

Fig. 2 is a block diagram illustration of an electronic mailing system in accordance with a preferred embodiment of the present invention;

Fig. 3 is a block diagram illustration of an electronic mailing system in accordance with a second embodiment of the present invention;

Fig. 4 is a block diagram illustration of a mail notification system in accordance with a preferred embodiment of the present invention;

Fig. 5 is a flow chart illustration of the operation of notifying a POB user that mail awaits collection; and

Fig. 6 is a block diagram illustration of an mail notification system in accordance with a further embodiment of the present invention.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

Reference is now made to Fig. 2 which illustrates an electronic mailing system, generally designated **40**, constructed and operative in accordance with a preferred embodiment of the invention.

Electronic mailing system **40** comprises a host computer, generally designated **50**, a dialing unit **52** and a

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receiving unit **54**. The sender **10** uses his computer **12** to contact host computer **50**, as hereinabove described with reference to prior art system of Fig. 1. When a mail message is received by host computer **50**, dialing unit **52**, which is connected to host computer **50**, dials the telephone number associated with the recipient via the public telephone network, shown by line **55**. Receiving unit **54** is attached to the recipient's telephone line in order to intercept and identify calls made to the recipient.

Receiving unit **54** can also be configured to display an indication that host computer **50** has called. Receiving unit **54**, which is generally located at a remote location from host computer **50**, only needs to be connected to the public telephone network and does not need to be connected to the recipient's computer **18** in order for the recipient to receive notifications from the host computer **50** that there are mail messages awaiting collection.

Host computer **50** further comprises a communications processor **60**, a user database **62** and a mail control unit **64**. Communications processor **60** processes all information communicated to host computer **50** and identifies the sender and recipient by reference to a database of subscribers contained within user database **62**. Communications related to mail messages are processed by mail control unit **64**, which registers all mail being sent via host computer **50**.

Whenever mail is received, mail control unit **64** retrieves details of the recipient's associated telephone number from user database **62** and passes the information on to dialing unit **52**. Dialing unit **52** then dials the recipient's associated phone number. Receiving unit **54** intercepts the call, using the call intercept unit **82** (described hereinbelow), made by dialing unit **52** and after identifying the caller, displays an indication that dialing unit **52** has called the recipient. It will be appreciated that, in contrast to prior art systems, a subscriber, with the present invention, is not obliged to contact the host computer **50** just to check whether there is any mail for him.

Mail control unit **64** comprises a plurality of mailboxes **70** and a mail update unit **72**. Received mail is stored in the recipient's mailbox which is one of the plurality of mailboxes **70**. A separate mailbox is allocated to each subscriber. Mail update unit **72** registers and updates the status of mail received and collected. When a subscriber communicates with host computer **50** for whatever purpose, host computer **50** checks mail update unit **72** and informs the subscriber whether any mail awaits him.

Receiving unit **54** comprises a processor **80**, a call intercept unit **82**, a phone database **84** and a display unit **86**.

Processor **80** controls the operation of receiving unit **54**. Call intercept unit **82** intercepts the call made by dialing unit **52** and searches phone database **84** to identify the caller. Phone database **84** contains data, such as details of the host telephone and name and address of the calling phone, entered by the recipient to enable him to identify the calling phone.

Receiving unit **54**, which is connected to telephone line **55**, may also be connected to the recipient's computer system **18**. The recipient's computer system **18** comprises a modem **96** connected to a computer, such as a personal computer (PC) **98**. Modem **96**, of a type known in the art, is connected to any telephone line and can also be connected to receiving unit **54**, if desired.

In operation, whenever mail is received at the host computer **50**, the recipient is identified, the message is stored in the appropriate mailbox **70** and mail update unit **72** is updated. Dialing unit **52** then dials the recipient's associated telephone number. If the phone call is identified as having been sent by dialing unit **52**, display unit **86** indicates to the recipient that host computer **50** has contacted him. After a pre-determined number of unanswered rings, for example after three rings, dialing unit **52** terminates the dialing sequence. Since the recipient has not lifted the receiver in order to communicate with the sender, in contrast to traditional phone communications, host computer **50** has not incurred any dialing charges. Thus, at no expense to the caller (host computer **50**), recipient **14** has received an indication that there is mail awaiting collection.

Call intercept unit **82**, can be any type known in the art, such as the "Call Editor II" unit manufactured by VIVE Synergies Inc. of Ontario, Canada, identifies the number of the person making the call by interpreting a data stream sent by the telephone company. The data stream is transmitted, for example, in most states of the United States, between the first and second ring signals. In this case, call intercept unit **82** only intercepts the call after the second ring when the data stream has been sent.

One form of data stream, known as the 'short form stream', consists of null values followed by a two-byte prefix, date, time and number, including area code. A "longer" data stream can also be sent and could include, for example, in addition to the information in the "short" stream, details of the name and directory information of the calling phone.

Display unit **86** can display the fact that dialing unit **52** has dialed the recipient by any suitable means, such as a LED (light emitting diode) display **88** which shows that at least one call has been received or by incrementing a counter **90** to show how many calls have been received and thus how many messages are awaiting collection. Display unit **86** can also be used to display any pertinent data stored in phone database **84**, such as the number **92** and the name **94** of the caller. An audio signal, such as a series of beeps, can also be used to indicate the receipt of the call.

It is not essential for the recipient's computer or modem to be connected to receiving unit **54** in order to receive notification from host computer **50** of messages addressed to him. However, in order to call host computer **50** the recipient uses his personal computer sys-

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tem **18** and thus it is preferable to connect receiving unit **54** to modem **96** and personal computer (PC) **98**.

Personal computer **98** can be instructed to contact host computer **50**. via modem **96** whenever the caller is identified as being host computer **50** and retrieve stored messages. Thus, provided PC **98** is operative, the recipient can automatically and immediately receive mail destined for him.

In a second embodiment, call intercept unit **82** is a remote receiver, not directly linked to a telephone line, such as a cellular telephone which can intercept the call dialed by dialing unit **52**.

In a third embodiment, the recipient can be notified of urgent messages. A separate telephone number is allocated by host computer **50** to dial "urgent" calls. Communications processor **60** of host computer **50** is further able to identify messages marked as "urgent" by the sender. On receipt of a "urgent" call from dialing unit **52**, call intercept unit **82** intercepts the call, as hereinabove described and displays the receipt of the "urgent" call on display unit **86**.

Reference is now made to Fig. 3 which illustrates electronic mailing system constructive and operative in accordance with a fourth embodiment of the present invention. Elements of this embodiment of the invention which are similar to elements which have been previously described with respect to the preferred embodiment hereinabove, are similarly designated and will not be further described.

Electronic mailing system **40** comprises a dialing unit **52** connected to a host computer **50**, as hereinabove described with respect to Fig. 2. Electronic mailing system **40** further comprises a receiving unit **110** remotely situated from dialing unit **52**.

Receiving unit **110**, such as the "Intellect" unit manufactured by Clearwave Communications of Fort Collins, Colorado, United States, is a communications unit which integrates several different communications functions. For example, the unit can be used as a telephone, facsimile, modem, a telephone answering machine and to receive voice mail. In combination with a specific software package, receiving unit **110** can also be used as an call intercept unit to intercept telephone calls and as a standard modem to dial out and receive mail messages, for example.

Receiving unit **110** comprises a modem communicator unit, generally designated **112**, connected to the recipient's computer system **18**. Modem communicator unit **112** comprises a modem **114** connected to a processor **80** and to a call intercept unit **82**. Call intercept unit **82** is a component of modem **114**. Communicator unit **112** is connected to a telephone line, designated **116**.

The recipient's computer system **18** comprises a personal computer **98**, connected to a display unit **86**. Personal computer **98**.contains the recipient's phone database **84**.

In operation, when dialing unit **52** dials the recipient's associated telephone number, call intercept unit **82** of modem **114**, intercepts the call, as previously described with respect to the embodiment of fig. 2. The data from the intercepted call is passed to PC **98** which processes the information. An indication that dialing unit **52** has called can be displayed on display unit **86**, as previously described with respect to the embodiment of fig. 2.

Similar to the previously described embodiment of Fig. 2, personal computer **98** can be instructed to contact host computer **50**, via modem **114** whenever the caller is identified as being host computer **50** and retrieve stored messages.

Reference is now made to Fig. 4 which illustrates a mail notification system, generally designated **210**, constructed and operative in accordance with a preferred embodiment of the invention. Elements having similar functions to the embodiments of Figs. 1 - 3 are designated with the same reference number.

Mail notification system **210** comprises a mail sorter **212** connected to a processing unit **214**, a dialing unit **216**, a plurality of Post Office Boxes (POBs) **218** and a receiving unit, generally designated **220**. Mail sorter **212**, processing unit **214** and dialing unit **216** are commonly located at a main postal distribution center **230**. POBs **218** are generally located at any central site which is convenient for the POB user, such as a shopping mall, commercial center or adjacent to the main postal distribution center **230**. Receiving unit **220** is generally located at a remote location from main postal distribution center **230**.

All mail arriving at the main postal distribution center is sorted by mail sorter **212** which scans the mail to identify the addressee and then sorts and distributes the mail to the correct destination. When mail is identified for an addressee having a POB number, the mail is directed to the relevant POB **218** and processing unit **214** is alerted to dial, via dialing unit **216**, the telephone number associated with the addressee. The call may be sent via the public telephone network, shown by line **225**. Receiving unit **220** is attached to the POB's telephone line and comprises a call intercept unit **82**, described hereinabove, with respect to Figs. 2 - 3, which intercepts the call made by dialing unit **216** and identifies the caller. Receiving unit **220** can also be configured to display an indication that main postal distribution center **320** has called.

Receiving unit **220** only needs to be connected to the public telephone network, and does not need to be connected to a computer and modem, in order for the POB user to receive notifications from the main postal distribution center **230** that mail messages have been deposited in his POB and are awaiting collection. Furthermore, the POB user does not have to initiate a call to the main postal distribution center **230** in order to check whether any mail has arrived.

Mail sorter **212** is any known in the art sorter which, for example, comprises an optical scanner or bar-code

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reader to "read" mail and in accordance with pre-determined criteria sorts, classifies and distributes the mail.

It will be appreciated that, though reference has been made to mail sorting by machines, the incoming mail may be sorted and classified by a person prior to being inserted into its correct box.

Mail notification system **210** further comprises a mail database **222** and a mail control unit **224** which are connected to processing unit **214**. Mail database **222** contains data, such as details of the names, addresses and telephone numbers of addressees in the postal distribution area. Mail control unit **224** registers and updates the status of mail received and collected for each POB user.

Processing unit **214**, which is any commercially available processor used in computer systems, processes all mail operations at the main postal distribution center **218**. Processing unit **214** receives address information from mail sorter **212** and identifies the addressee by reference to the data contained within mail database **222**. Processing unit **214** extracts the addressee's telephone number from database **222** and passes the information onto dialing unit **216**. Processing unit **214** also advises mail control unit **224** whenever mail is received for POB users.

Received mail is stored in the addressee's POB **218** which is one of the plurality of post office boxes. A separate POB is allocated to each subscriber.

Receiving unit **220** comprises a processor **80**, a call intercept unit **82**, a phone database **84** and a display unit **86**. Receiving unit **220** is similar to the embodiments described hereinabove with respect to Figs. 1 - 3.

Processor **80** controls the operation of receiving unit **220**. Call intercept unit **82** intercepts the call made by dialing unit **216** and searches phone database **84** to identify the caller. Phone database **84** contains data, such as details of the name and address of the calling phone, entered by the POB user or the post office to identify the calling phone.

Receiving unit **220**, which is connected telephone line **225**, may also be connected to the addressee's computer system **240**. The addressee's computer system **240** comprises a modem **96** connected to a computer, such as a personal computer (PC) **98**. Modem **96**, of a type known in the art, is connected to any telephone line and can also be connected to receiving unit **220**, if desired.

A POB user can optionally use his PC **98** and modem **96** to communicate with the main postal distribution center **230** to check whether any mail has been received. On receipt of a call from the POB user, mail control unit **224** checks and informs the subscriber accordingly.

Call intercept unit **82**, described hereinabove with respect to Figs. 1 - 3, can be any type known in the art, such as the "Call Editor II" unit manufactured by VIVE Synergies Inc. of Ontario, Canada, or "Caller ID Adapter" manufactured by Rochelle Communications Inc. of Austin, Texas.

Reference is now made to Fig. 5 which is a flow chart illustration of the operation of notifying a POB user that mail awaits collection.

Mail arriving at the main postal distribution center **218** is sorted by mail sorter **212** which scans the addresses of the incoming mail (step 302). The scanned addresses are passed on to processing unit **214** which checks whether the address includes a box number (step 304). If a box number is included, processing unit **214** retrieves details of the addressee's associated telephone number from mail database **222** (step 306) and passes the information on to dialing unit **216** (step 308). Dialing unit **216** then dials the addressee's associated phone number (step 310). Mail control unit **224** updates the status of mail received (step 312). The mail is allocated to the appropriate box (step 314) and the process repeated.

In a further embodiment, call intercept unit **82** is not directly linked to a telephone line, but communicates via a cellular telephone so as to intercept the call dialed by dialing unit **216**.

In a yet further embodiment (Fig. 4), a suitable sensing device **270**, commercially available and known in the art, can be attached to each of the plurality of POBs. Sensing devices **270** can be connected to processing unit **214** either directly or alternatively and can communicate with processing unit **214** via a suitable commercially available transmitting device **272**. In this case, each time mail is inserted into, or collected from, POB **218**, sensor **270** sends a signal to processing unit **214**. Processing unit **214** is programmed to identify the POB from the sensor signal.

As hereinabove described, processing unit **214** extracts the addressee's telephone number from database **222** and passes the information onto dialing unit **216**. Processing unit **214** also advises mail control unit **224** whenever mail is received for POB users.

A second sensor **272** can be attached close to the outlet of POB **218** and similar to sensing device **270** can be connected to processing unit **214** so as to communicate with processing unit **214**. Each time mail is removed from POB **218**, sensor **272** registers the fact and sends a signal to mail control unit **224** via processing unit **214**.

Reference is now made to Fig. 6 which illustrates a mail notification system constructive and operative in accordance with a further embodiment of the present invention. Elements of this embodiment of the invention which are similar to elements which have been previously described with respect to the preferred embodiment hereinabove, are similarly designated and will not be further described.

Mail notification system generally designated **400**, comprises a voice mail processing unit **402**, a dialing unit **404**, a plurality of Voice Mail Boxes (VMBs) **406**, a voice mail database **408**, and a receiving unit, generally designated **410**.

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Voice mail processing unit **402** is any voice mail processing system known in the art, which is operable to communicate through the telephone network. Calls may be answered automatically, for example, and the caller may be provided with a plurality of options for passing on messages. Voice mail database **408** contains data, such as details of the names, addresses and telephone numbers, related to each of the subscribers using one of the plurality of VMBs **406** associated with the mail notification system **400**. Dialing unit **404** is similar to dialing unit **216** described hereinabove with respect to Fig. 4.

Voice messages received from a calling party are processed by voice mail processing unit **402** which identifies the destination for the incoming call by reference to the voice mail database **408** and stores the message in the respective VMB **406**.

Voice mail processing unit **402** abstracts the telephone number associated with the VMB **406** and dials the VMB user via dialing unit **404**, as hereinabove described with respect to Fig. 4.

Receiving unit **410**, which is similar to receiving unit **110** described hereinabove with respect to Fig. 3, is a communications unit such as the "Intellect" unit manufactured by Clearwave Communications of Fort Collins, Colorado, United States.

Receiving unit **410** comprises a modem communication unit, generally designated **412**, connected to the mailbox user's computer system **218**. Modem communication unit **412** comprises a modem **414** connected to a processor **80** and to a call intercept unit **82**. Modem communicator **440** is connected to a telephone line, designated **416**.

Optionally, the mailbox user's computer system **240** comprises a personal computer **98**, connected to a display unit **86**. Personal computer **98** contains the addressee's phone database **84**.

In operation, an incoming call is processed by voice mail processing unit **402**. Depending on the type of voice mail processing unit **402** being used, the interface available and the information input by the caller, voice mail processing unit **402** processes the incoming call. Generally, voice mail processing unit **402** references voice mail database **408** in order to identify the destination for the incoming call and stores the message in the respective VMB **406**.

Dialing unit **404** dials the addressee's associated telephone number and call intercept unit **82** of modem communicator **210**, intercepts the call, as previously described with respect to the embodiment of Fig. 4. The data from the intercepted call is passed to PC **98** which processes the information. An indication that dialing unit **404** has called can be displayed on display unit **86**, as previously described with respect to the embodiment of Fig. 4.

As will be appreciated by persons knowledgeable in the art, the various embodiments hereinabove referred are given by way of example only and do not in any way limit the present invention.

Those skilled in the art will be readily appreciate that various changes, modifications and variations may be applied to the preferred embodiments without departing from the scope of the invention as defined in and by the appended claims.

Claims

1. An electronic mailing system having at least a main host computer, for transferring mail between a sending subscriber and a recipient subscriber, said sending subscriber and said recipient subscriber not being continually connected to each other or to said host computer, comprising:

   a. a dialing unit connected to said host computer for calling a telephone number associated with said recipient subscriber whenever a mail message for said recipient subscriber arrives at the host computer;
   b. a receiving unit comprising a call intercept unit associated with the recipient subscriber's telephone, for intercepting said telephone call from said dialing unit; and
   c. a display unit for displaying an indication that said dialing unit has called said call intercept unit.

2. An electronic mailing system according to claim 1 wherein said host computer comprises:

   a. a communications processor for processing information communicated to said host computer;
   b. a user database for storing details of subscribers to said host computer; and
   c. a mail control unit for processing mail messages communicated to said host computer.

3. An electronic mailing system according to claim 2 wherein said mail control unit comprises:

   a. a plurality of mailboxes for storing of said received mail messages, each of said plurality of mailboxes allocated to one of said subscribers; and

   b. a mail update unit for registering and updating the status of one of said mailboxes whenever a mail message is received or collected from said mailbox.

4. An electronic mailing system having at least a main host computer, for transferring mail between a sending subscriber and a recipient subscriber, said sending subscriber and said recipient subscriber

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not being continually connected to each other or to said host computer, comprising:

a. a dialing unit connected to said host computer for calling a telephone number associated with said recipient subscriber whenever a mail message for said recipient subscriber arrives at the host computer;
b. a receiving unit comprising a modem communicator associated with the recipient subscriber's telephone for receiving said telephone call from said dialing unit; and
c. a computer system comprising a display unit for displaying an indication that said dialing unit has called said call intercept unit.

5. An electronic mailing system according to claim 4 wherein said modem communicator comprises a call intercept unit, for intercepting said telephone call from said dialing unit.

6. An electronic mailing system according to any of the previous claims wherein said receiving unit further comprises a phone database for storing details associated with each of said calling telephone numbers.

7. An electronic mailing system according to any of the previous claims wherein said call intercept unit comprises processing means for processing data sent by the telephone network.

8. An electronic mailing system according to claim 1 wherein said call intercept unit is a remote receiver.

9. A mail notification system for notifying an addressee that mail has been deposited in the addressee mailbox, the system comprising:

a. a processing unit for processing mail operations;
b. a dialing unit connected to said processing unit for calling a telephone number associated with said addressee subscriber whenever mail is deposited in said addressee subscriber's mailbox;
c. a receiving unit comprising a call intercept unit associated with the addressee subscriber's telephone, for intercepting said telephone call from said dialing unit; and
d. a display unit for displaying an indication that said dialing unit has called said call intercept unit.

10. A mail notification system according to claim 9 further comprising a mail sorter, connected to said processing unit, for identifying and classifying mail addressed to said addressee subscriber.

11. A mail notification system for notifying an addressee subscriber that mail has been deposited in said addressee subscriber's mailbox, comprising:

a. a processing unit for processing mail operations;
b. a sensing device, connected to said addressee subscriber's mailbox and said processing unit, for sensing whenever mail is deposited in or removed from said addressee subscriber's mailbox;
c. a dialing unit connected to said processing unit for calling a telephone number associated with said addressee subscriber whenever mail is deposited in said addressee subscriber's mailbox;
d. a receiving unit comprising a call intercept unit associated with the addressee subscriber's telephone, for intercepting said dialed telephone call; and
e. a display unit for displaying an indication that said dialing unit has called said call intercept unit.

12. A mail notification system according to any of claims 9 - 11, further comprising:

a. a user database for storing details of mailbox subscribers; and
b. a mail control unit for registering and updating the status of one of said mailboxes whenever mail is received or collected from said mailbox.

13. A mail notification system for notifying an addressee subscriber that mail has been deposited in said addressee subscriber's mail box, comprising:

a. a processing unit for processing said incoming mail;
b. a dialing unit connected to said processing unit for calling a telephone number associated with said addressee subscriber whenever mail is deposited in said addressee subscriber's mail box;
c. a receiving unit comprising a modem communicator associated with the addressee subscriber's telephone for receiving said telephone call from said dialing unit; and
d. a computer system comprising a display unit for displaying an indication that said dialing unit has called said call intercept unit.

14. A mail notification system according to claim 13 wherein said modem communicator comprises a call intercept unit, for intercepting said telephone call from said dialing unit.

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15. A method for notifying a subscriber that mail has been deposited in said subscriber's mailbox, comprising the steps of:

a. processing incoming mail;
b. depositing mail addressed to said subscriber in said subscriber's mailbox;
c. dialling a telephone number associated with said subscriber whenever said mail is deposited in said subscriber's mailbox;
d. intercepting said dialled call by means of an unit associated with said subscriber's telephone; and
e. displaying an indication that said dialled call has been intercepted.

16. A method for transferring mail between a sending subscriber and a recipient subscriber via a host computer, said sending subscriber and said recipient subscriber not being continually connected to each other or to said host computer, said method comprising the steps of:

a. dialling a telephone number associated with said recipient subscriber whenever a mail message for said recipient subscriber arrives at said host computer;
b. intercepting said dialled telephone call by means of an unit associated with said subscriber's telephone; and
c. displaying an indication that said dialled call has been intercepted.

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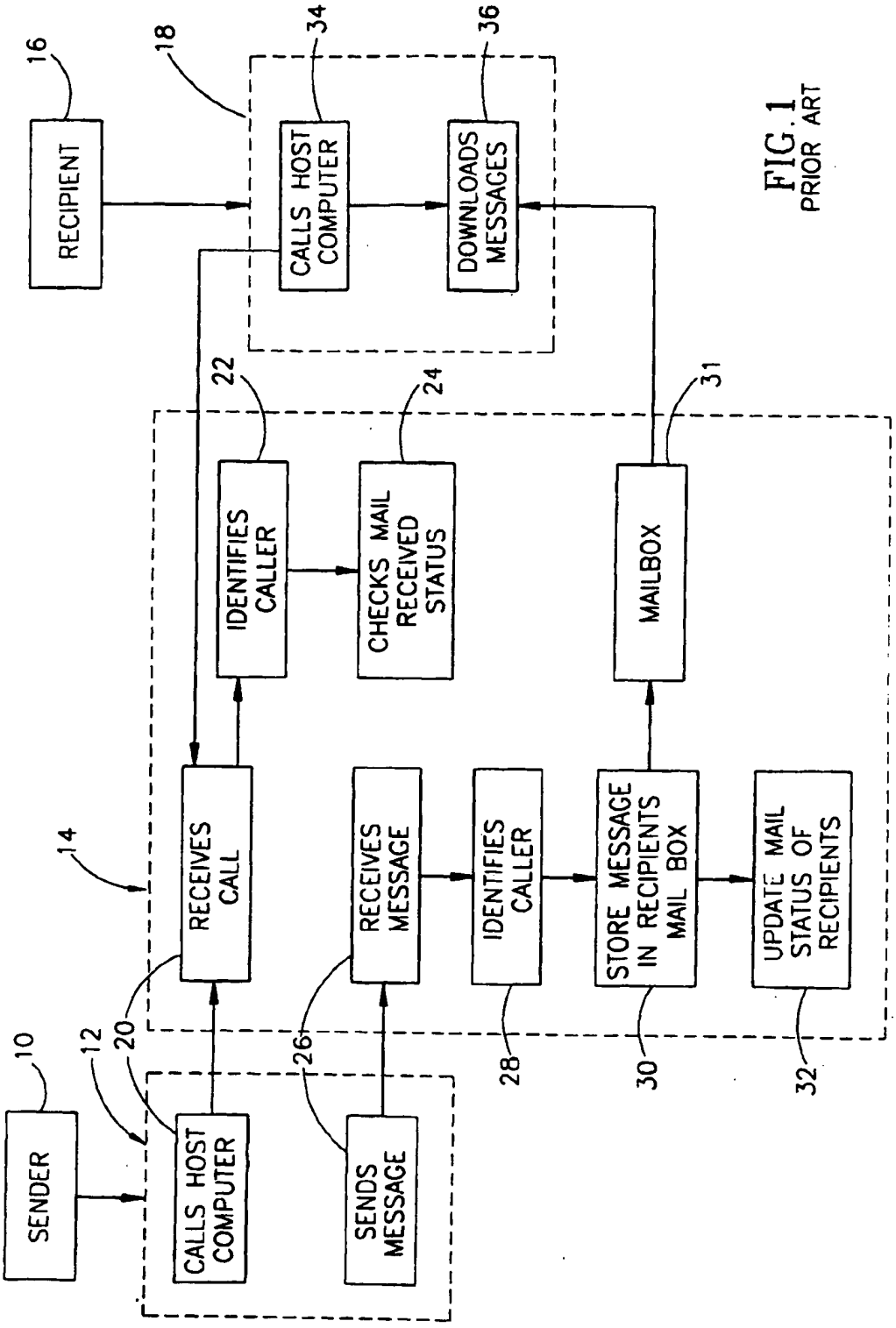

FIG.1
PRIOR ART

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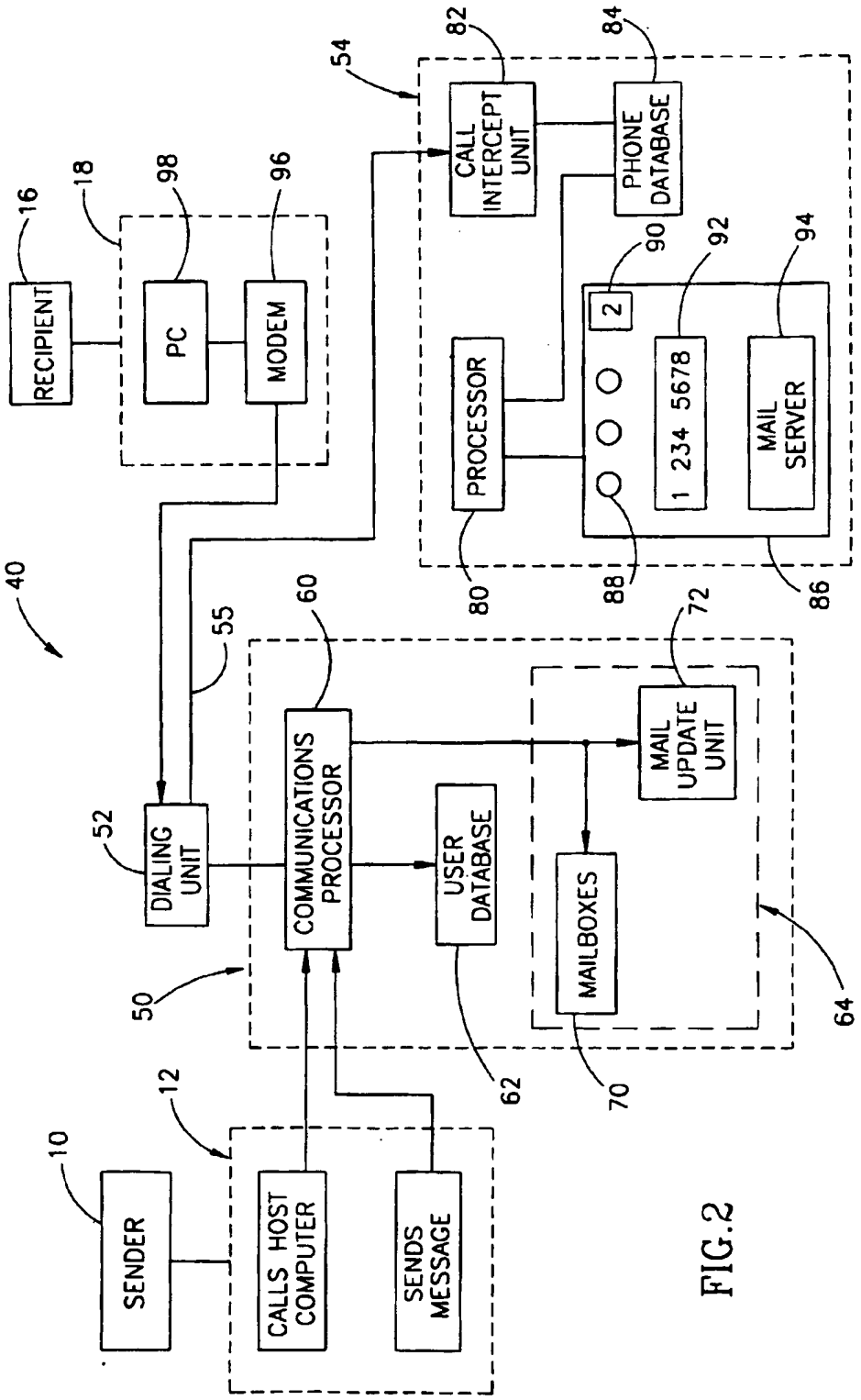

FIG.2

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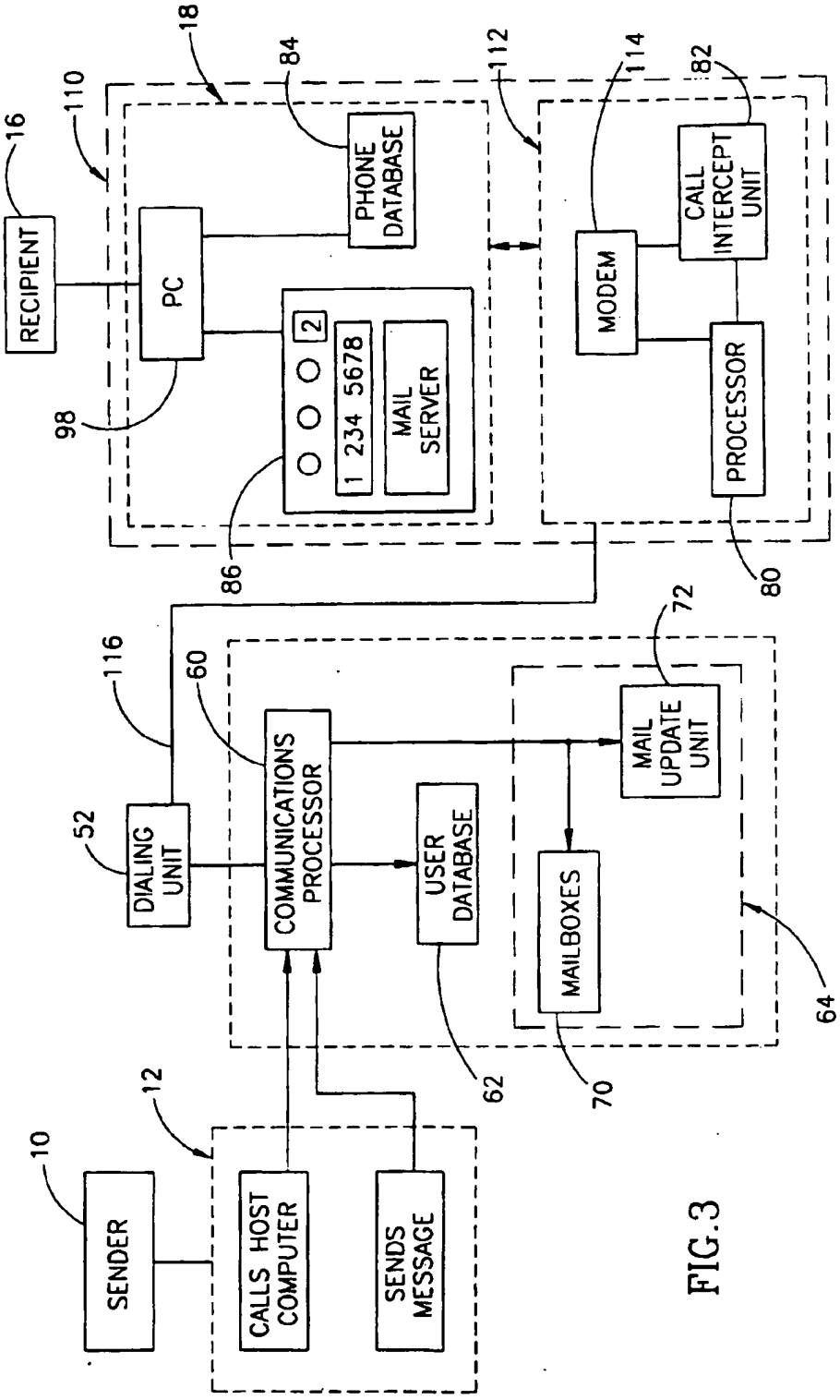

FIG.3

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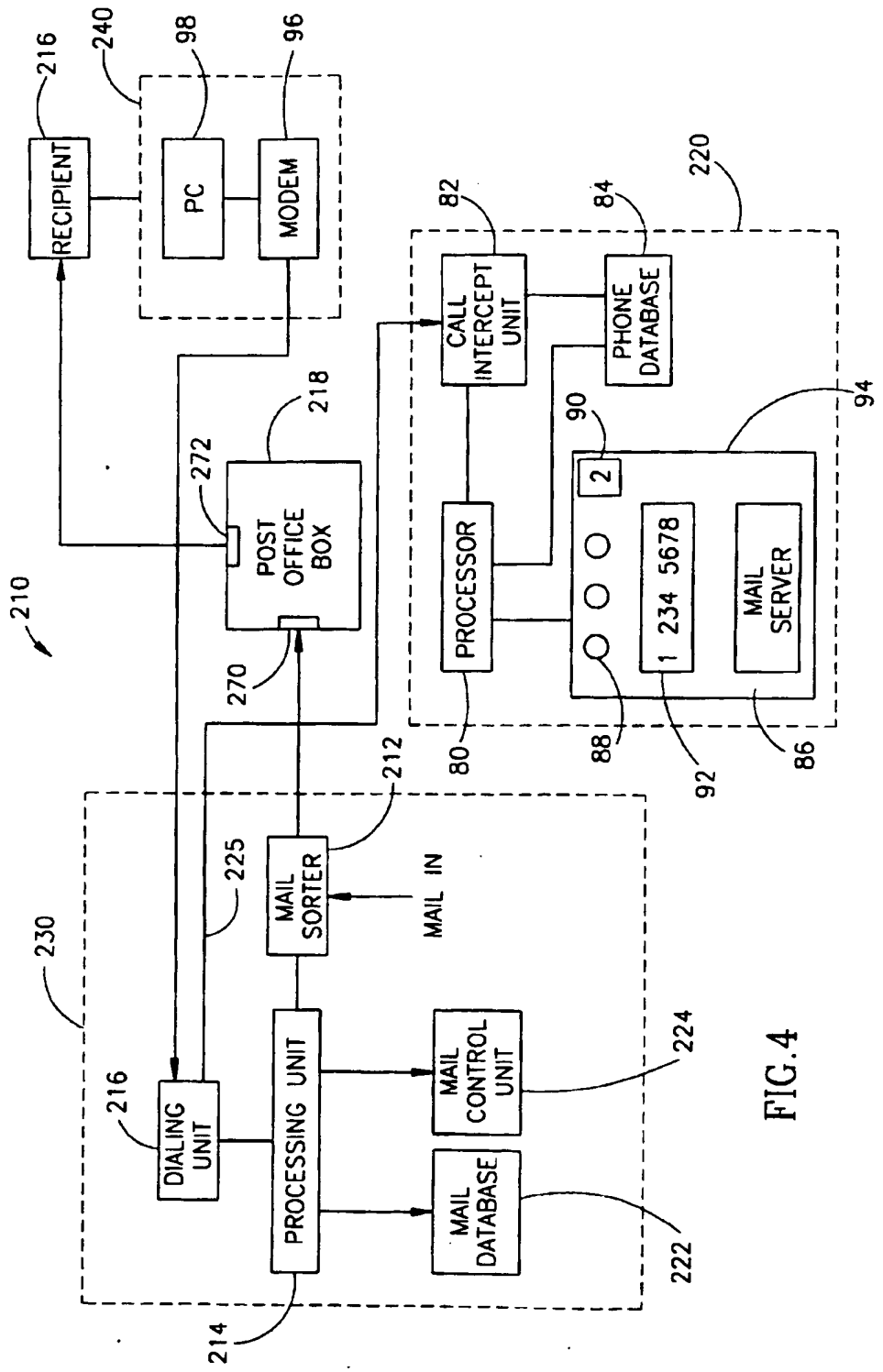

FIG.4

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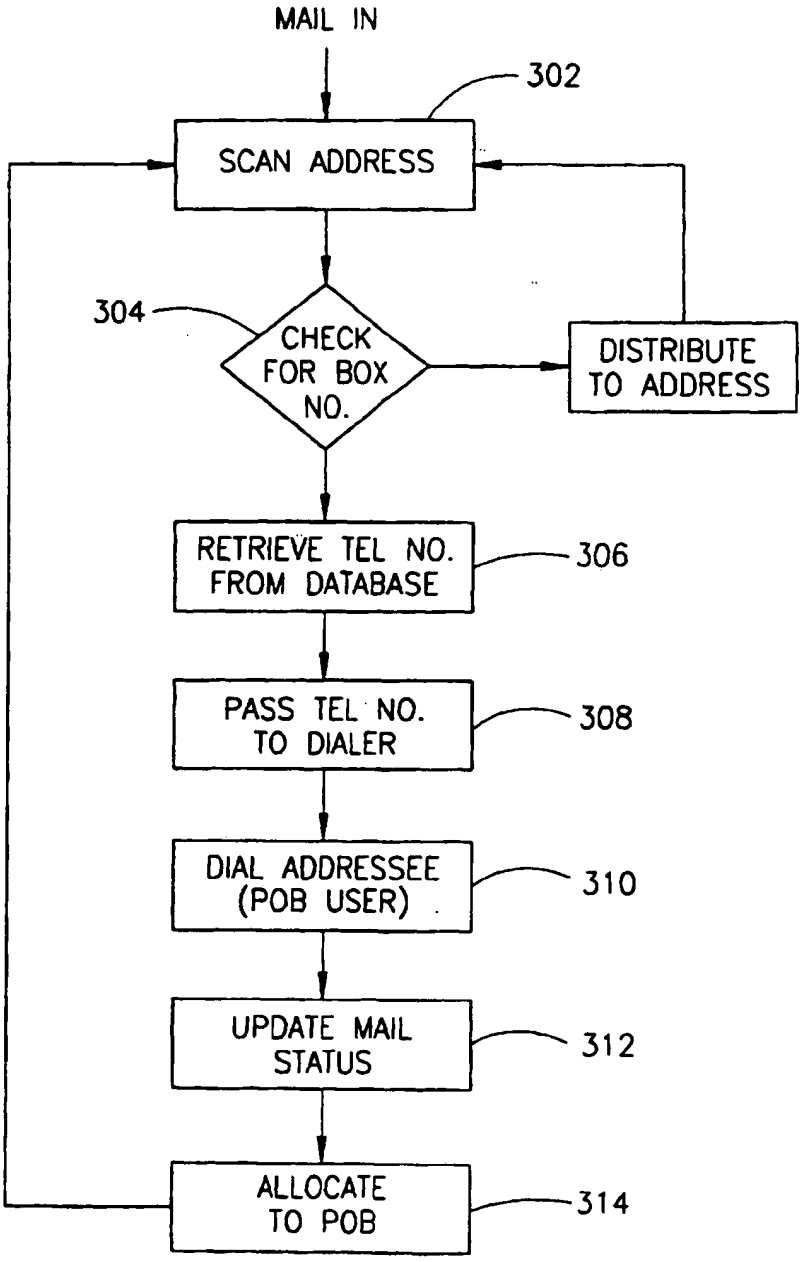

FIG.5

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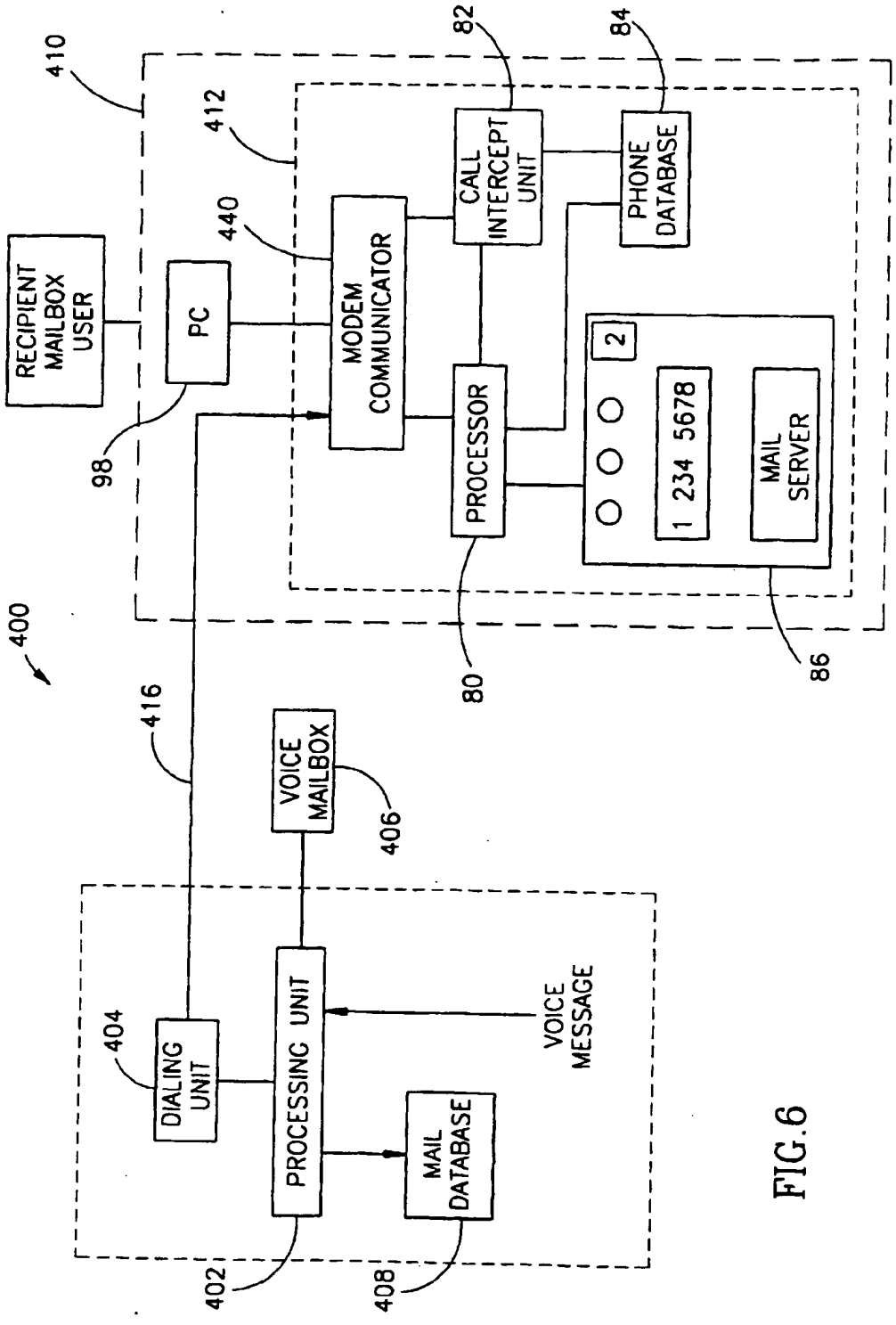

FIG.6

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(54) Mail notification system and method

(57) An electronic mailing system having at least a main host computer, for transferring mail between a sending subscriber and a recipient subscriber is provided. The subscribers are not connected to each other or to the host computer. Messages are sent from one sender subscriber to another recipient subscriber via the host computer which stores mail addressed to subscribers in individual mailboxes. The host computer has a dialing unit connected to it for calling a phone associated with the recipient subscriber whenever a new message arrives at the host computer. The recipient has a receiving unit including a call intercepting unit associated with the recipient's phone for intercepting and identifying calls from the dialing unit and a display unit for displaying an indication that the dialing unit has called the call intercepting unit.

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EUROPEAN SEARCH REPORT

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EP 96 30 2430

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	EP 0 508 138 A (HITACHI LTD) 14 October 1992 * abstract * * column 2, line 25 - column 3, line 42 * * column 4, line 22 - column 7, line 24 * * column 7, line 53 - column 9, line 20 *	1-16	H04L12/58 H04M3/50
A	US 5 138 653 A (LE CLERCQ PATRICK) 11 August 1992 * the whole document *	1-16	
A	US 5 398 280 A (MACCONNELL ROBERT N) 14 March 1995 * abstract * * column 2, line 10 - line 32 * * column 5, line 54 - line 56 *	1-16	
A	PATENT ABSTRACTS OF JAPAN vol. 018, no. 148 (E-1522), 11 March 1994 & JP 05 327762 A (RICOH CO LTD), 10 December 1993, * abstract *	1-16	
A	A.J. HUFFMAN: "E-mail-the "Glue" to Office Automation" IEEE NETWORK: THE MAGAZINE OF COMPUTER COMMUNICATIONS., vol. 1, no. 4, - October 1987 NEW YORK US, pages 4-10, XP002042252 * page 8, right-hand column, last paragraph - page 9, left-hand column, line 20 *	1-16	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)
H04L
H04M

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	30 September 1997	Mikkelsen, C

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